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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/517,256	03/02/2000	Vlado Ostovic	800448	4760

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EXAMINER

WAKS, JOSEPH

ART UNIT

PAPER NUMBER

2834

DATE MAILED: 06/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/517,256	OSTOVIC, VLADO	
	Examiner	Art Unit	
	Joseph Waks	2834	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 March 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 35-48 and 50-53 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 44 is/are allowed.
- 6) ☒ Claim(s) 35-38, 40-43, 45-48 and 50-53 is/are rejected.
- 7) ☒ Claim(s) 39 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
 If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
 * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
 a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

New Office Action

1. This Office Action is in response to the Amendment received on March 12, 2003. The Office Action mailed on January 13, 2003 is vacated as being directed to incorrect set of claims.

The new Office Action in response to the amendment follows.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 35-37, 45** are rejected under 35 U.S.C. 102(b) as being anticipated by **Burr (US 3,219,861)**.

Burr discloses in Figure 2 invention as claimed: a multi-pole rotor 14 comprising ferromagnetic pole segments 15-22 extending between the inner and the outer rotor surface, slots separating the pole segments and extending between the inner and the outer rotor surface, wherein the slots have a width continuously varying along the direction from the inner to the outer rotor surface and a magnet structure 15a-22a having a width in the direction from the inner to the outer rotor surface.

4. **Claim 35, 36, 38 and 45** are also rejected under 35 U.S.C. 102(b) as being anticipated by **Heidelberg et al. (US 5,128,575)**.

Heidelberg et al. disclose in Figure 2 invention as claimed: a multi-pole rotor 2 comprising magnetically conductive pole segments 14 extending between the inner and the outer

rotor surface, slots separating the pole segments and extending between the inner and the outer rotor surface, wherein the slots have a width varying in a stepwise manner along the direction from the inner to the outer rotor surface and a magnet structure 12 having a width varying in the direction from the inner to the outer rotor surface.

5. **Claims 35, 40-42, 47, 48** are rejected under 35 U.S.C. 102(b) as being anticipated by **Steen (US 4,139,790)**.

Steen discloses in Figure 3 invention as claimed: a multi-pole rotor comprising ferromagnetic pole segments extending between the inner and the outer rotor surface, slots separating the pole segments and extending between the inner and the outer rotor surface, wherein the slots have a width continuously varying along the direction from the inner to the outer rotor surface and a magnet structure 27-30 having a width in the direction from the inner to the outer rotor surface and rectangular cross-section, a non-magnetic structure 47, 48, a squirrel cage 33.

6. **Claims 50-53** are rejected under 35 U.S.C. 102(b) as being anticipated by of **McCarty et al. (US 4,242,610)**.

McCarty et al. disclose in Figure 1 invention as claimed: a multi-pole rotor of an electric machine comprising iron pole segments 14 each extending from the inner surface of the rotor to the outer surface of the rotor, slots separating each of the ferromagnetic pole segments each of said slots also extending from the inner surface of the rotor to the outer surface of the rotors and the tangentially magnetized magnet structure 22 constructed and arranged within the slots and extending in the direction from the inner surface of the rotor to the outer surface of the rotors.

The magnetic field generating means disposed within or in the proximity of each of said iron pole segments are inherent to the disclosed motor and/or generator structure.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claim 43** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Burr (US 3,219,861)** or **Heidelberg et al. (US 5,128,575)** in view of **Steen (US 4,139,790)**.

Both, **Burr** and **Heidelberg et al.** disclose the electric machine essentially as claimed. However, neither **Burr** nor **Heidelberg et al.** disclose the non-magnetic wedge disposed within the ferromagnetic segments.

Steen disclose in Figure 3 the multi-pole rotor 10 provided with rectangular permanent magnets 27-30 and the squirrel cage 33 for the purpose of electrical dampening of the flux harmonics caused by the stator.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the machine as taught by **Burr** or **Heidelberg et al.** and to provide non-magnetic structure per each of the rotor poles as taught by **Steen** for the purpose of electrical dampening of the flux harmonics caused by the stator.

9. **Claim 46** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Burr (US 3,219,861)** or **Heidelberg et al. (US 5,128,575)** in view of **McCarty et al. (US 4,242,610)**.

Both, **Burr** and **Heidelberg et al.** disclose the electric machine essentially as claimed. However, neither **Burr** nor **Heidelberg et al.** disclose the non-magnetic wedge disposed within the ferromagnetic segments.

McCarty et al. disclose in Figure 3 the multi-pole rotor 10 provided with trapezoidal permanent magnets 22 and a non-magnetic structure 14 per pole for the purpose of supporting the magnets and magnetically separating the poles one from another, and the squirrel cage 34 for the purpose of electrical dampening of the flux harmonics caused by the stator.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to design the machine as taught by **Burr** or **Heidelberg et al.** and to provide non-magnetic structure per each of the rotor poles as taught by **McCarty et al.** for the purpose of supporting the magnets and magnetically separating the poles one from another as well as to provide the squirrel cage for the purpose of electrical dampening of the flux harmonics caused by the stator.

Allowable Subject Matter

9. **Claim 44** is allowed.

Re claim 44, the feature of the first slot portion extending entirely from the inner to the outer surface of the rotor and a second slot portion extending from the outer surface of the rotor but not entirely to the inner surface of the rotor and the magnet structure arranged in each of the slots and comprising a first permanent magnet of a rectangular cross-section disposed in the first slot and at least second permanent magnet of a rectangular cross-section disposed in the second slot, in combination with the other limitations present, are neither disclosed nor taught by the prior art of record.

10. **Claim 39** is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Re claim 39, the feature of the slots having the width varying along the direction from the inner to the outer rotor surface and comprising magnetic structure of two permanent magnet of a rectangular cross-section disposed immediately adjacent to each other, in combination with the other limitations present, are neither disclosed nor taught by the prior art of record.

Response to Arguments

11. Applicant's arguments with respect to claim 40, 45 and 46 have been considered but are moot in view of the new ground(s) of rejection.

Prior Art

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Waks whose telephone number is (703) 308-1676. The examiner can normally be reached on Monday through Thursday 8 am to 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor R Ramirez can be reached on (703) 308-1371. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-1341 for regular communications and (703) 305-1341 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-1782.


JOSEPH WAKS
PRIMARY PATENT EXAMINER
TC-2800

JW
May 27, 2003